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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/518,628

06/27/2005

Augustinus Bader

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EXAMINER

DAVIS, RUTH A

ART UNIT

PAPER NUMBER

1651

MAIL DATE

DELIVERY MODE

12/05/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/518,628	Applicant(s) BADER, AUGUSTINUS	
	Examiner Ruth A. Davis	Art Unit 1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28-32,34,36,37 and 53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 28-32,34,36-37,53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's Request for Continued Examination filed on September 19, 2008 and the amendment and response filed on July 21, 2008 have been received and entered into the case. Claims 28 – 32, 34, 36 – 37 and 53 are pending and have been considered on the merits. All arguments have been fully considered.

Claim Rejections - 35 USC § 112

1. Rejections under 35 U.S.C. 112, second paragraph, are withdrawn due to amendment.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 28 – 30, 32, 34 and 36 – 37 stand rejected under 35 U.S.C. 102(b) as being anticipated by Naughton et al. (US 4963489).

Applicant claims a method for in vitro regeneration of tissue, the method comprising multiplying and differentiating adult tissue specific cells in the presence of exogenous EPO or derivative thereof, wherein growth is locally initiated, terminated and structurally guided. The

Art Unit: 1651

cells are liver cells and growth is induced by treating the cells with EPO, TPO, GH or derivatives thereof. The cells are further cultured with at least one growth factor selected from TGF beta, prostaglandin, GM-CSF, GHRH, TRH, GnRH, CRH, dopamine, ADH, oxytocin, prolactin, adrenocorticotropin, beta-celotropin, lutotropin and/or vasopressin. The method is practiced in the presence of endothelial cells; the cells are grown with a biological matrix or supporting structure; wherein the matrix or support is selected from implants, stents, patch, skin, hydrogel, bone substitute material, allogenic, autologous, xenogenic, synthetic, feeder or fabric tissues; and the matrix or support has been precolonized with cells selected from tissue specific cells, precursor cells, bone marrow cells, peripheral blood cells, adipose tissue or fibrous tissue.

Naughton teaches methods for generating tissues comprising culturing cells and tissue in vitro wherein the cells proliferate into tissues (abstract) and wherein growth factors such as GH, somatomedins (somatostatin), EPO, and/or prostaglandins (col.12 line 14-27) are added to alter, modulate proliferation and/or differentiation (or the cells are multiplied, differentiated, initiated, terminated and structurally guided by growth factors) (col.12). The added cells may be endothelial cells (abstract), bone marrow cells, liver cells (col.3 line 26-36), fibroblasts, plasma cells (peripheral blood cells), adipocytes (adipose cells), mast cells (tissue specific cell) (col.3 line 45-50), smooth muscle cells, or osteoblasts (col.10). The growth of the cells are guided by a biological matrix which can be used as an implant or transplant material (col.25, abstract). Naughton teaches the cell aggregates are broken up (examples, col.29).

The reference anticipates the claimed subject matter.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 28 – 32, 34, 36 – 37 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naughton as evidenced by Chen et al. (US 5076492).

Applicant claims a method for in vitro regeneration of tissue, the method comprising multiplying and differentiating adult tissue specific cells in the presence of exogenous EPO or derivative thereof, wherein growth is locally initiated, terminated and structurally guided. The cells are liver cells and growth is induced by treating the cells with EPO, TPO, GH or derivatives thereof. The cells are further cultured with at least one growth factor selected from TGF beta, prostaglandin, GM-CSF, GHRH, TRH, GnRH, CRH, dopamine, ADH, oxytocin, prolactin, adrenocorticotropin, beta-celitropin, lutotropin and/or vasopressin; or are further cultured with nerve regeneration factors (NGF) or vessel regeneration factors. The method is practiced in the presence of endothelial cells; the cells are grown with a biological matrix or supporting structure; wherein the matrix or support is selected from implants, stents, patch, skin, hydrogel, bone substitute material, allogenic, autologous, xenogenic, synthetic, feeder or fabric tissues; and the matrix or support has been precolonized with cells selected from tissue specific cells, precursor cells, bone marrow cells, peripheral blood cells, adipose tissue or fibrous tissue. The adult tissue specific cells are selected from osteoblasts, fibroblasts, hepatocytes and smooth muscle cells.

Naughton teaches methods for generating tissues comprising culturing cells and tissue in vitro wherein the cells proliferate into tissues (abstract) and wherein growth factors such as GH, somatomedins (somatostatin), EPO, and/or prostaglandins (col.12 line 14-27) are added to alter, modulate proliferation and/or differentiation (or the cells are multiplied, differentiated, initiated, terminated and structurally guided by growth factors) (col.12). The added cells may be endothelial cells (abstract), bone marrow cells, liver cells (col.3 line 26-36), fibroblasts, plasma cells (peripheral blood cells), adipocytes (adipose cells), mast cells (tissue specific cell) (col.3 line 45-50), smooth muscle cells, or osteoblasts (col.10). The growth of the cells are guided by a biological matrix which can be used as an implant or transplant material (col.25, abstract). Naughton teaches the cell aggregates are broken up (examples, col.29).

Naughton does not teach the method wherein all of the claimed growth factors are used in the method. However, at the time of the claimed invention, the instant growth factors were well known and used in the art to generate cells into tissues. In support, Chen teaches culturing endothelial cells in the presence of VEGF (abstract). Thus, at the time of the claimed invention, it would have been obvious to one of ordinary skill in the art to use any of the claimed growth factors in the methods of Naughton as a matter of routine practice as evidenced by

Moreover, at the time of the claimed invention, one of ordinary skill in the art would have been motivated by routine practice and Chen to use any of the claimed growth factors in the methods of Naughton with a reasonable expectation for successfully generating tissues in vitro.

Response to Arguments

Applicant argues that Naughton does not teach EPO promotes tissue regeneration in separate locations, that EPO is listed among a list of many without a specific example, that the action is not inherent in the methods of Naughton. Applicant further argues that it is unexpected that EPO grows adult tissue specific cells and promotes 3D growth of tissues.

However these arguments fail to persuade because Naughton clearly teaches the claimed methods. It is not required that Naughton specifically exemplify all of the teachings, nor to recognize the specific action, particularly since the reference clearly teaches culturing the same cells in the presence of EPO as claimed. Furthermore, since the claims fail to include a particular amount of EPO and is also in combination with other growth factors the reference meets the claimed limitations. Regarding the 3D growth, it is maintained that since the reference teaches the same growth factors in the same methods as claimed, the prior art must also exhibit 3D growth, otherwise applicant's invention would not work.

For these reasons, the claims stand rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ruth A. Davis whose telephone number is 571-272-0915. The examiner can normally be reached on M-F 7:00 -3:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1651

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ruth A. Davis/
Primary Examiner, Art Unit 1651

December 3, 2008.